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THE IDENTITY OF CANTHARELLUS BREVIPES AND CANTHARELLUS CLAVATUS

EDWARD T. HARPER

(WITH PLATES 93, 94 AND 95)

The plants illustrated in plates 93 and 94, accompanying this article, are frequently met with at Neebish, Michigan. They grow on the ground in damp mossy places or among needles in coniferous woods. We referred them at first to *Cantharellus brevipes* Peck, but the illustration of *Craterellus clavatus* by Fries¹ suggested that Peck's species is the same as *Craterellus* or better *Cantharellus clavatus* of Europe, and further study of other illustrations and descriptions of that species appears to prove the identity beyond doubt. *Cantharellus clavatus* has been figured many times in European works on mycology. One of the latest illustrations is that in Rolland's *Atlas Champignons* (pl. 52). The plant is really a *Cantharellus* and has been so called by Corda, Bresadola and others. The description in Saccardo's² *Sylloge* fits our plant except that the hymenium becomes pale ochraceous pruinose rather than "whitish pruinose from the spores," which is necessarily the case since the spores are ochraceous. In dried specimens the spore pruina appears whitish over the dark background of the hymenium unless special attention is paid to the color. The pruinose surface is very noticeable. The spore measurements, $4-5 \times 10-12 \mu$, agree with those of our plants exactly and also with those of *Cantharellus brevipes*.

Cantharellus clavatus has been reported from Maine by Sprague, according to Saccardo (l. c.) and Lloyd³ has recognized it among plants sent to him from Montana, but he thought the spores of the Montana plant appeared hyaline under the microscope. The spores in our plants are pale-ochraceous.

¹ Fries, *Sverige Svamp. pl. 97*. 1836.

² Saccardo, *Syll. Fung.* 6: 519. 1888.

³ Lloyd, letter 44, note 56.

Peck⁴ described and illustrated *Cantharellus brevipes* in 1880. He has also recorded two other collections.⁵ The fact that it is so rare in New York State and that it is really a *Cantharellus* accounts for its not being recognized as Persoon's species.

The illustrations in plates 93 and 94 show the appearance of the Neebish plants. The plants are usually quite regularly obconic or turbinate with the pileus truncate or slightly depressed and the acute margin even or slightly wavy as in plate 93. This is the form illustrated by Peck. The hymenium is a network of folds and wrinkles. The wrinkle-like lamellae are more nearly parallel toward the top and more reticulate below, the reverse of the condition in *Cantharellus floccosus*. Under favorable weather conditions the plant becomes broader and the margin is thin and lobed as in plate 94 *A*. Sometimes these luxuriant forms grow in dense clusters as in *B*. Sometimes the plants appear branched from a common stem. Sometimes they are irregular and the lobes on the pileus very long as in Britzelmayr's illustration (tab. 698). The flesh of our plants is whitish. The colors vary considerably. The pileus is yellowish or umber with tinges of purple or violet. It becomes faded, scaly and pitted when old. The hymenium is usually deep violet with flesh-colored tints. A whole series of variously colored forms have been noted in Europe.

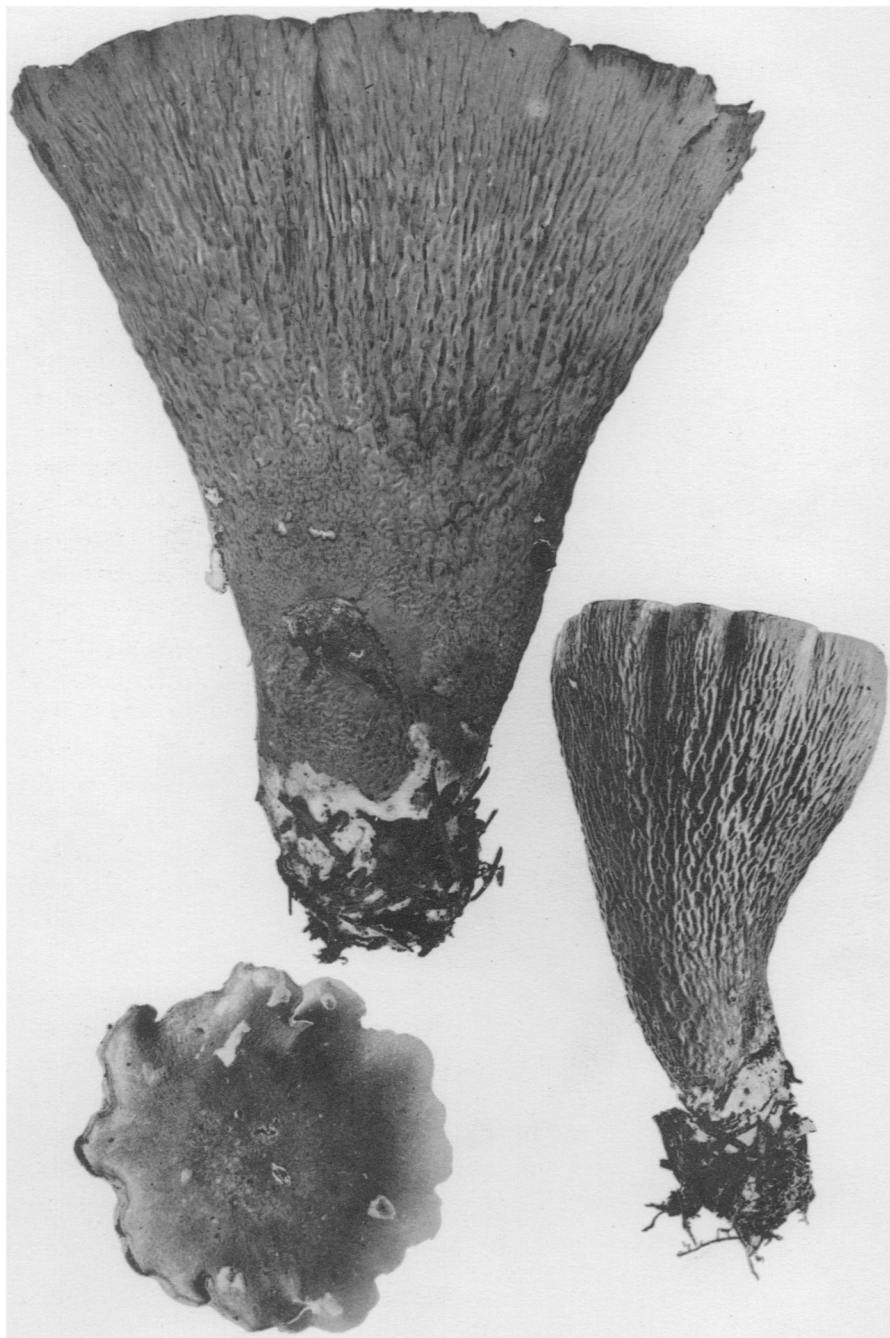
It has been recognized already that the plants referred to as *Craterellus clavatus*, by Peck,⁶ are *Craterellus pistillaris* Fries. Peck speaks of their close resemblance to *Clavaria pistillaris* and describes the margin of the pileus as obtuse and crenate. *Craterellus pistillaris* has been taken in this country for a form of *Clavaria pistillaris* by Atkinson⁷ and Lloyd (l. c.). Fries said *Craterellus pistillaris* was frequently found in pine woods about Upsala where true *Clavaria pistillaris* was never found. It is interesting that our plants illustrated in plate 95 are found in coniferous woods at Neebish, Michigan, and we have never seen *Clavaria pistillaris* there. Only once has the plant been collected at Neebish, and then not in coniferous woods. It is

⁴ Peck, Ann. Rep. N. Y. State Mus. 33: 21. pl. 1, f. 18-20. 1880.

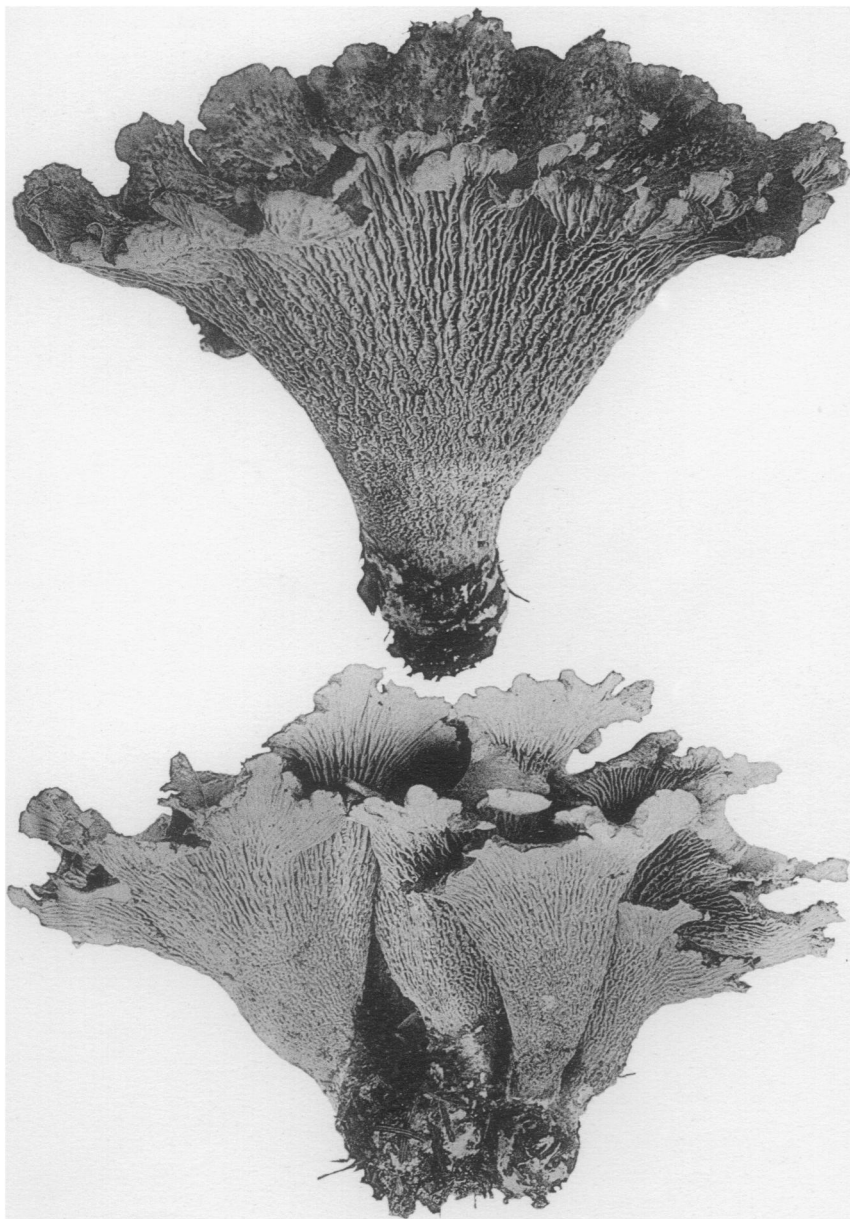
⁵ Peck, Ann. Rep. N. Y. State Mus. 51: 298. 1897.

⁶ Peck, Ann. Rep. N. Y. State Mus. 32: 35, 1880, and Bull. N. Y. State Mus. 2: 48. 1887.

⁷ Atkinson, Mushrooms, 203. 1903.



CANTHARELLUS CLAVATUS (PERS)



CANTHARELLUS CLAVATUS (PERS)



CRATERELLUS PISTILLARIS, FR.

very common in frondose woods elsewhere in Michigan and Wisconsin. Other collectors may not have this experience however.

Atkinson and others are undoubtedly right in considering Fries' plant a variety of *Clavaria pistillaris* and it should be placed in a group with that species. Fries recognized the similarity of the two but probably placed the plant in the genus *Craterellus* because of the depressed pileus. The hymenium is usually continuous to the apex. Schaeffer's figures (290), are supposed to represent this form but they appear to us more like small forms of *Cantharellus clavatus*.

Plate 95 shows the common forms of the plant as found at Neebish: (A) a form with the hymenium nearly smooth and the margin obtuse and even; (E) a form with a wrinkled hymenium and margin of the pileus crenate; (B) a very small plant; (C) the extreme form in old plants with the hymenium very rugose and pitted; (D) a wrinkled pileus with slight umbo in the center. The plants are spongy and soon become hollow. The base of the stem is often bulbous. The colors are reddish-brown like *Clavaria pistillaris*, but the hymenium is often dull violet with yellowish tints above and on the pileus. The spores are $6-7 \times 10-12 \mu$; basids club-shaped, $12 \times 60 \mu$; sterigmata 10μ long. The spores of *Clavaria pistillaris* are in our specimens ovate, $4-5 \times 8-11 \mu$. The flesh of our plants is not nearly as solid as that of *Clavaria pistillaris*. The two forms, however, run together. Hard's⁸ illustration of *Clavaria pistillaris* (fig. 396), appears like an intermediate form, and *Craterellus corrugis* Peck,⁹ must be something similar. Forms of *Clavaria pistillaris* with the apex pinched in are well known.

A letter from Mr. C. G. Lloyd confirms both of the above identifications. Mr. Lloyd has examined Persoon's type of *Merulius clavatus* at Leiden and a co-type specimen of Fries' *Craterellus clavatus* at Kew. He has also seen a type specimen of Fries' *Craterellus pistillaris* at Kew and Peck's specimens at Albany.

⁸ Hard, *Mushrooms*. f. 396. 1908.

⁹ Peck, *Bull. Torrey Club* 26: 69. 1899.